



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,677	07/31/2003	Michael Fogaing	1062702	7667
59152	7590	08/24/2006	EXAMINER	
OSLER, HOSKIN & HARCOURT, LLP (AVESTOR) 1000 DE LA GAUCHETIERE STREET WEST SUITE 2100 MONTREAL, QC H3B-4W5 CANADA			YUAN, DAH WEI D	
			ART UNIT	PAPER NUMBER
			1745	
DATE MAILED: 08/24/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,677

Applicant(s)

FOGAING ET AL.

Examiner

Dah-Wei D. Yuan

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11032003.02022006</u> | 6) <input type="checkbox"/> Other: _____ |

POLYMER BATTERIES HAVING THERMAL EXCHANGE APPARATUS

Examiner: Yuan

S.N. 10/630,677

Art Unit: 1745

August 16, 2006

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-13, in Paper filed July 26, 2006 is acknowledged. The traversal is on the ground(s) that no serious burden on the examiner to search the independent claim 14, because it encompasses the features in dependent claims 2,7, and 11. This is found to be persuasive; therefore, claims 1-14 are examined for their merit thereafter.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2,14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The terms "resilient" and "low" in claims 1,2,14 are relative terms which render the claims indefinite. The terms "resilient" and "low" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimamura et al. (US 7,008,720 B2).

With respect to claim 1, Shimamura et al. teach a polymer battery comprising a plurality of electrochemical cells, each comprising a plurality of laminates and current collecting terminal leads (8,9), surface covering layers (9a,9b) (heat sink) positioned adjacent and in mechanical contact with the terminal leads, and a battery outer sheath (3) (thermally conductive housing). See Figures 4,5, Column 2, Lines 39-60; Column 8, Lines 12-22. The material used for the terminal leads, such as Cu, Fe, and stainless steel, are considered as electrically resistive and thermally conductive.

With respect to claim 2, Shimamura et al. further teach the use of a welding portion (2) (low friction film) positioned between the inner surface of the housing and the surface covering layer. It is also the position of the examiner that the intended use “the film adapted to ease relative movement between said resilient heat sink material and said at least one of said walls” in the claim does not add structure to the claim. Intended use of a known component does not give it patentable weight. See *In re Thuau*, 57 USPQ 324, CCPA 979 135 F2d 344, 1943.

With respect to claim 3, Shimamura et al. teach the surface covering layers conform to the surface of the terminal leads. See Figures 4,5.

With respect to claim 11, Shimanura et al. teach the surface covering layers are extending along the length of the electrochemical cells. See Figures 4,5.

7. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Ishida et al. (US 2003/0134190 A1).

With respect to claim 1, Ishida et al. teach a polymer battery comprising a plurality of electrochemical cells, each comprising a plurality of laminates and current collecting terminal leads (109), a thermal fuse (112) (heat sink) positioned adjacent and in mechanical contact with the terminal leads, and a battery metal sheath (102) (thermally conductive housing). See Figures 1,5,21, paragraphs 8,85,103,120. The material used for the terminal leads, such as copper and aluminum, are considered as electrically resistive and thermally conductive.

With respect to claim 2, Ishida et al. further teach the use of an insulating resin (110b) (low friction film) positioned between the inner surface of the housing and the thermal fuse. It is also the position of the examiner that the intended use “the film adapted to ease relative movement between said resilient heat sink material and said at least one of said walls” in the claim does not add structure to the claim. Intended use of a known component does not give it patentable weight. See *In re Thuau*, 57 USPQ 324, CCPA 979 135 F2d 344, 1943.

With respect to claim 3, Ishida et al. teach the thermal fuse conforms to the surface of the terminal leads. See Figures 4,5.

With respect to claim 11, Ishida et al. teach the thermal fuse is extending along the length of the electrochemical cells. See Figures 4,5.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimamura et al. (US 7,008,720 B2).

The disclosure of Shimamura et al. differs from Applicant's claims in that Shimamura et al. do not teach the surface covering layer are separated into a plurality of ribbons which adapt to circumscribe and separate each ribbon from adjacent ribbons. However, it is the position of the examiner that the claimed configuration is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed electrochemical generator is significant. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

10. Claims 7-10,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimamura et al. (US 7,008,720 B2) as applied to claims 1-6,11 above, and further in view of Wessman (US 6,705,418).

Shimamura et al. teach a polymer electrochemical generator as described above in Paragraph 6. However, Shimamura et al. do not teach the additional of a heat exchange apparatus positioned adjacent to the outer surface of the housing. Wessman teaches a battery wherein the cap of the battery housing is configured with a plurality of fin-type members (projecting vanes) (444) that extend from an exteriorly exposed surface for enhancing thermal discharge of heat from the battery housing to air circulated across the fins. See Figure 8c, Column 12, Lines 22-46. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate a plurality of fin-type members on the exterior surface of the housing of Shimamura et al., because Wessman teaches the use of fins to enhance thermal discharge of heat from the battery.

11. Claims 7-10,14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. (US 2003/0134190 A1) as applied to claims 1-3,11 above, and further in view of Wessman (US 6,705,418).

Ishida et al. teach a polymer electrochemical generator as described above in Paragraph 7. However, Ishida et al. do not teach the additional of a heat exchange apparatus positioned adjacent to the outer surface of the housing. Wessman teaches a battery wherein the exterior of the battery housing is configured with a plurality of fin-type members (projecting vanes) (444) that extend from an exteriorly exposed surface for enhancing thermal discharge of heat from the battery housing to air circulated across the fins. See Figure 8c, Column 12, Lines 22-46. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate a plurality

of fin-type members on the exterior surface of the housing of Ishida et al., because Wessman teaches the use of fins to enhance thermal discharge of heat from the battery.

Allowable Subject Matter

12. Claims 12,13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 12,13 would be allowable because the prior art does not disclose or suggest the resilient heat sink material is a silicon elastomer compound including a thermally conductive ceramic filler.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 1745

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan
August 17, 2006



DAH-WEI YUAN
PRIMARY EXAMINER